Maximum : 100 marks

Time : 1 hour and 15 minutes

1. The location of Thermostat valve in cooling system is :

   (A) at engine inlet from radiator
   (B) at engine outlet to radiator
   (C) between radiator and water pump
   (D) between water pump and engine

2. The viscosity of multigrade oil is determined at :

   (A) 0°F
   (B) 100°F
   (C) 0°C
   (D) 100°C

3. The rotor type oil pump has :

   (A) an inner rotor with a lobe less than the outer rotor
   (B) an outer rotor with a lobe less than the inner rotor
   (C) an inner rotor with a lobe more than the outer rotor
   (D) two rotor with same number of lobes

4. Theoretically the inlet valve closes at BDC during suction stroke. Practically the inlet valve remains open a few more degrees of crank shaft rotation after BDC. The purpose of this is to :

   (A) Reducing frictional power
   (B) Increase valve overlapping period
   (C) Reduce compression pressure
   (D) Increase volumetric efficiency

5. Catalytic converter is associated with :

   (A) automatic transmission system
   (B) engine intake system
   (C) emission control system
   (D) vehicle braking system

6. Which of the following is not a part of primary circuit of ignition system?

   (A) Battery
   (B) CB points
   (C) Ignition coils thick wire winding
   (D) Spark plug

7. Insufficient clutch free pedal play causes :

   (A) Difficulty in gear shifting
   (B) Dragging of clutch
   (C) Clutch slipping
   (D) Clutch spinning

8. Double helical gears are known as :

(A) Herring bone gear
(B) Spur gear
(C) Bevel gear
(D) Spiral gear

9. Which of the following device can bring two gears rotating at different speeds to the same speed for smooth gear shifting?

(A) Throw out bearing
(B) Synchronizer
(C) Idler gear
(D) Inter locking mechanism

10. The type of lubrication system suitable for racing cars is :

(A) wet sump lubrication system
(B) splash lubrication system
(C) dry sump lubrication system
(D) petrol lubrication system

11. If the lock to lock steering wheel rotation is four turns and the front wheel movement is 60 degrees, what is the steering ratio?

(A) 15:1
(B) 18:1
(C) 24:1
(D) 21:1

12. The effect of carbon deposits on the cylinder head inside the combustion chamber is :

(A) increased delay period
(B) increased fuel economy
(C) reduced compression ratio and pre-ignition
(D) increased compression ratio and pre-ignition

13. Which among the following maintains a constant level of petrol in float chamber?

(A) Petrol main jet
(B) Float and needle valve
(C) Float and throttle valve
(D) Choke valve

14. The time duration, given in degrees of distributor rotation that the CB points remain closed between successive opening is :

(A) Dwell
(B) Camber angle
(C) Included angle
(D) Overlap period

15. The engine power transfer mechanism that combines a transmission assembly and differential assembly in a single unit is known as :

(A) multi axle mechanism
(B) free wheel mechanism
(C) transfer case
(D) trans axle mechanism

16. Which among the following is not a part of suspension system?

(A) trailing link (B) tie rod

(C) torsion bar (D) anti roll bar

17. The stub axle is connected to the front main axle beam by means of :

(A) Shackle pin (B) Wrist pin

(C) King pin (D) Tie rod

18. The distance between the centre of front wheel at straight ahead position and the centre of rear wheel is known as :

(A) Wheel track (B) Thrust line of wheels

(C) Wheel base (D) Toe-in of the wheels

19. "External pressure applied upon a confined fluid is transmitted uniformly in all directions". This law is :

(A) Pascal's law (B) Boyles law

(C) Charl's law (D) Avagadro's law

20. Which of the following is not a possible cause of engine overheating?

(A) Brake binding (B) Fan belt slipping

(C) Oil with less viscosity (D) Over inflated tyre

21. The narrow space in the cylindrical air horn of the Carburettor through which the air passes is :

(A) Float chamber (B) Ventuary

(C) Mixing chamber (D) None of the above

22. Major constituent of CNG (Compressed Natural Gas) is :

(A) Butane (B) Propane

(C) Ethane (D) Methane

23. The component of air brake system which protect reservoir from over loading is :

(A) Brake valve (B) Unloader valve

(C) Levelling valve (D) Brake chamber

24. The larger gear wheel used in the final drive is called :

(A) Crown wheel (B) Sun gear

(C) Pinion wheel (D) Planet gear

25. The formation of air pockets inside the torque converter due to low pressure is known as :

(A) Air bleeding
(B) Cavitation
(C) Free wheeling
(D) None of the above

26. Which among the following factor which does not affect engine compression ratio?

(A) Thickness of cylinder head gasket
(B) Carburettor flooding
(C) Baffles on piston
(D) Particulate deposits inside cylinder

27. The process commonly used for the manufacturing of cylinder liners is :

(A) forging
(B) centrifugal casting
(C) plaster mould casting
(D) moulding

28. The material used for piston ring is :

(A) Cast Iron with Silicon
(B) Forged steel
(C) Stainless steel
(D) Alluminium alloy

29. The component which transmit reciprocating motion of valve lifter to rocker arm :

(A) valve guide
(B) tappet
(C) push rod
(D) rocker shaft

30. Valve lapping is the process of grinding :

(A) valve seat and margin
(B) valve seat and stem
(C) valve seat and guide
(D) valve seat and face

31. The warpage of machined faces of cylinder block and cylinder head can be checked with :

(A) Dial guage
(B) Telescopic guage
(C) Straight edge
(D) Trammel

32. The test for finding the chemical conditions of the positive and negative battery plates is :

(A) Open volt test
(B) High discharge test
(C) Specific gravity test
(D) Cadmium test

33. The leaf springs are connected to axle beam by means of :

(A) U-bolt
(B) Shackle
(C) Centre bolt
(D) Shackle pin

34. The angle between king pin centre line and vertical in the plane of wheel is called :

(A) Steering axis inclination
(B) King pin inclination
(C) Castor
(D) Camber

35. Wear on tyre is more on one side is due to :

(A) Incorrect camber angle
(B) Low tyre pressure
(C) High tyre pressure
(D) Sudden acceleration

36. Useful power obtained at the engine fly wheel is called :

(A) Indicated power
(B) Frictional power
(C) Mechanical advantage
(D) Brake power

37. The nozzle valve in the injector unit is lifted off from it's seat by :

(A) Spring pressure
(B) High pressure diesel
(C) Spindle pressure
(D) Compression pressure

38. FIP is driven by :

(A) Crank shaft gear
(B) Distributor shaft
(C) Cam shaft screw gear
(D) Cam shaft gear

39. Which among the following tool is suitable for inserting piston with rings into the engine cylinder?

(A) Screw driver
(B) Piston ring expander
(C) Piston ring compressor
(D) All of the above

40. The boiling point of the coolent in cooling system is raised by :

(A) Pressure cap
(B) Pump casing
(C) Thermostat valve
(D) Radiator

41. Wheat stone bridge works on the principle of :

(A) Ohms Law
(B) Kirchoff's Laws
(C) Joules Law
(D) Faraday's Law

42. In DC machines for more voltage usually winding is done in :

(A) Lap winding
(B) Double Layer winding
(C) Wave winding
(D) Concentric winding

43. The curve representing ohm's law is :

(A) A parabola
(B) Line functions
(C) Linear
(D) A hyperbola

44. The capacity of a Lead acid cell is usually expressed in :

(A) Ampere hour
(B) Voltage
(C) Watts
(D) Ampere

45. The output voltage of ignition coil in an automobile is given to :

(A) Battery
(B) Distributer
(C) Headlight
(D) Spark plug

46. When power factor is unity, the phase angle between voltage and current?

(A) 45°
(B) 90°
(C) 60°
(D) 0°

47. In a water turbine alternator the speed will be :

(A) Low
(B) Medium
(C) High
(D) Very high

48. The speed of a DC series motor is dangerously high at no load because :

(A) Back emf is high
(B) Armature voltage is low
(C) Flux is very low
(D) Armature current is high

49. Which caliper is used for scribing line along curved edges?

(A) Inside caliper
(B) Outside caliper
(C) Spring joint caliper
(D) Jenny caliper

50. This is not the reason for no light from the bulb in an automobile lighting system :

(A) Overcharged battery
(B) Defective light switch
(C) Fused bulb
(D) Blown fuse

51. If a contactor is in the open position, the armature is at its greatest distance from the core and the impedance of the coil is :

(A) Zero
(B) Low
(C) High
(D) Half the normal value

52. For a given VA rating cross-section area of core will be less if the following metal is used :

(A) Dynamo sheet
(B) High alloy sheet
(C) Normal iron sheet
(D) Stalloy sheet

53. Which of the following is not used for etching?

(A) Ferric Chloride
(B) Cupric Chloride
(C) Alkaline Ammonia
(D) Carbon Tetra Chloride

54. An AC or DC electric motor can be used to automatically :

(A) Charge the spring
(B) To release the spring
(C) To discharge the spring
(D) To load the circuit breaker

55. Air pollution is the least in this type of energy converter :

(A) Bio gas energy converters
(B) Diesel generating sets
(C) Solar cell energy converter
(D) Thermal electric generating stations

56. If a new vehicle is found that the negative terminal of the battery is earthed. This indicates the use of the following :

(A) DC Generator
(B) AC Generator
(C) Ignition coil
(D) Inverter

57. Sweep of ceiling fan refers to :

(A) Radius of circle formed by its rotation
(B) Double the length of the blade
(C) The distance from the centre of motor to tip of blade
(D) Double the distance from centre of motor to tip of blade

58. In electrical accessories the use of silver is at :

(A) Contact points
(B) Switch terminal
(C) Lamp terminal
(D) Wire

59. The instrument which can be classified as an absolute instrument is :

(A) Milli ammeter
(B) Micro ammeter
(C) Galvanometer
(D) Tangent galvanometer

60. The rating of power factor improvement capacitor is in :

(A) Micro farads (B) Farads

(C) KVAR (D) KVA

61. A transistor is a ———————— operated device.

(A) Current (B) Voltage

(C) Both voltage and current (D) None of the above

62. DC supply is essential for the operation of :

(A) Mercury vapour lamp (B) Arc lamp

(C) Sodium vapour lamp (D) Fluorescent lamp

63. Chatter in an AC relay magnet can be eliminated by using :

(A) Laminator

(B) Shading coil

(C) 'U' shaped magnetic core

(D) Matching fixed and movable magnetic limbs

64. In this wiring, two lamps should be switched 'ON' at a time :

(A) Tunnel wiring (B) Hostel wiring

(C) Godown wiring (D) Corridor wiring

65. For alignment of the job in a lathe machine, we may require small movements (small angular movements) of the chuck. This could be achieved by using a controller with :

(A) Dynamic brake push-button (B) Regenerative brake push-button

(C) Delay push-button (D) Jogging push-button

66. Degaussing is the process of :

(A) Removing gases from a material

(B) Removing impurities from a magnetic material

(C) Demagnetizing a metallic part

(D) Demagnetizing a magnet

67. HRC fuse is superior protective device as compared to circuit breaker and relay as far as :

(A) Electromagnetic stresses are concerned

(B) Thermal stresses are concerned

(C) Both electromagnetic and thermal stresses are concerned

(D) None of the above

68. Which of the following material has a negative temperature co-efficient of resistance?

(A) Carbon (B) Brass

(C) Copper (D) Aluminium

69. By inserting reactance in the rotor circuit :

(A) Reduces starting torque as well as maximum torque

(B) Increases starting torque but maximum torque remains unchanged

(C) Increases starting torque as well as maximum torque

(D) Increases starting torque but maximum torque reduces

70. In three phase power measurement by two wattmeter method, reading of one wattmeter found negative. Then the P.F of the load is :

(A) 0.4 lagging (B) 0.5 lagging

(C) 0.8 lagging (D) Unity

71. Epoxy cable joint is used where

(A) H.T cable joints (B) Heating of the cable is not permitted

(C) Temporary joint (D) 'T' joints only

72. At the suction stroke in a reciprocating pump, the ———— valve closes and ———— valve opens.

(A) Foot, Non return (B) Non return, Foot

(C) Delivery, Suction (D) Suction, Delivery

73. Voltage stabilizers having auto transformer in servo stabilizer is of

(A) Core type (B) Shell type

(C) Distributed core type (D) Toroidal type

74. The ripple factor of a capacitor filter may be decreased by

(A) Decreasing R_L (B) Increasing R_L

(C) Increasing C (D) Increasing both R_L and C

75. On doubling the supply frequency, the eddy current will

(A) Become half of their former value

(B) Become four times of their former value

(C) Remains unaffected

(D) Become eight times of their former value

76. If three persons take reading in horizontally placed meter at the same instant, whose reading is correct?

(A) The reading taken by the left hand side person

(B) The reading taken by the middle person

(C) The reading taken by the right hand side person

(D) The reading taken by three persons simultaneously

77. If the end of the shaft of a grinder motor turn blue it is an indication of :

(A) Over heating (B) Scoring

(C) Freezing (D) Burring

78. In black cotton soil, where water level is encountered within the pole pit, it is better to use :

(A) Concrete foundation (B) Earthen foundation

(C) Embankment only (D) Mass concrete and embankment

79. For testing insulation resistance the most suited electrical supply is :

(A) Alternating current (B) Direct current

(C) Pulsating current (D) Oscillating current

80. When an electric train moves down a hill, the DC series motor then act as :

(A) DC shunt motor (B) DC shunt generator

(C) DC series motor (D) DC series generator

81. On which river bank is Goa located?

(A) Ganga (B) Mandovi

(C) Gomati (D) Sabarmati

82. In which state is "Hawa Mahal (Palace of breeze)" located?

(A) Rajasthan (B) Karnataka

(C) Andhra Pradesh (D) Uttar Pradesh

83. The inception of the rebellion of 1857 was in :

(A) Meerut (B) Ambala

(C) Barrackpore (D) Delhi

84. Gandhiji started Satyagraha in 1919 to protest against the :

(A) Salt Law (B) Act of 1909

(C) Jalianwala Bagh Massacre (D) Rowlatt Act

85. The concept of five years plan in India was introduced by :

(A) Jawaharlal Nehru (B) Indira Gandhi

(C) Lord Mountbatten (D) Lal Bahadur Shastri

86. The type of soil which is known locally as "Regur" soil and suitable for cotton cultivation :

(A) Alluvial soil (B) Black soil

(C) Red soil (D) Laterite soil

87. Where was the first session of Indian National Congress held at :

(A) Kolkatta (B) Lahore

(C) Mumbai (D) Delhi

88. Where is the lotus temple located?

(A) Punjab (B) Mumbai

(C) Lucknow (D) Delhi

89. The climate of India is :

(A) Monsoonal (B) Equitorial

(C) Continental (D) Mediterranean

90. Which is the largest state in India?

(A) Uttar Pradesh (B) Rajasthan

(C) Madhya Pradesh (D) Bihar

91. Who is known as "Kerala Valmiki"?

(A) Vallathol Narayana Menon (B) M.T. Vasudevan Nair

(C) Thunjath Ezhuthachan (D) Kumaran Aashan

92. Where is Edakkal caves located?

(A) Palakkad (B) Wayanad

(C) Kazargode (D) Kozhikode

93. Who is the founder of Sadhujana Paripalana Yogam?

(A) Sree Narayana guru (B) EMS Namboothiripadu

(C) Ayyankali (D) Chattampi Swami

94. The number of west flowing rivers in Kerala :

(A) 33 (B) 29

(C) 14 (D) 41

95. Smallest Taluk in Kerala :

(A) Kochi (B) Eranad

(C) Ottapalam (D) Varkala

96. Which is the largest fresh water lake in Kerala ?

(A) Astamudi (B) Vembanad

(C) Wular (D) Kolleru

97. What is the total cost length of Kerala?

(A) 290 (B) 490

(C) 590 (D) 440

98. Which among the following districts of Kerala receives highest rainfall?

(A) Kozhikode (B) Ernakulam

(C) Palakkad (D) Idukki

99. Which type of forest has maximum area coverage in Kerala?

(A) Tropical moist deciduous (B) Tropical wet evergreen

(C) Tropical dry deciduous (D) Mountains sub tropical

100. How many legislative assemblies are there in Kerala?

(A) 120 (B) 141

(C) 114 (D) 135
